

# STAYING HEALTHY IN SOUTHWEST ASIA

13 October 1994

## How to Stay Alive

- \* BE CAREFUL, THINK SAFETY
  - \* Drink plenty of fluids
- \* DO NOT drink untreated water
  - \* Wash your hands
  - \* Use insect repellent
  - \* Report illness quickly



U.S. ARMY MEDCOM

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MEDICAL RESEARCH & MATERIEL COMMAND

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Prepared by  
Division of Preventive Medicine, Walter Reed Army Institute of Research

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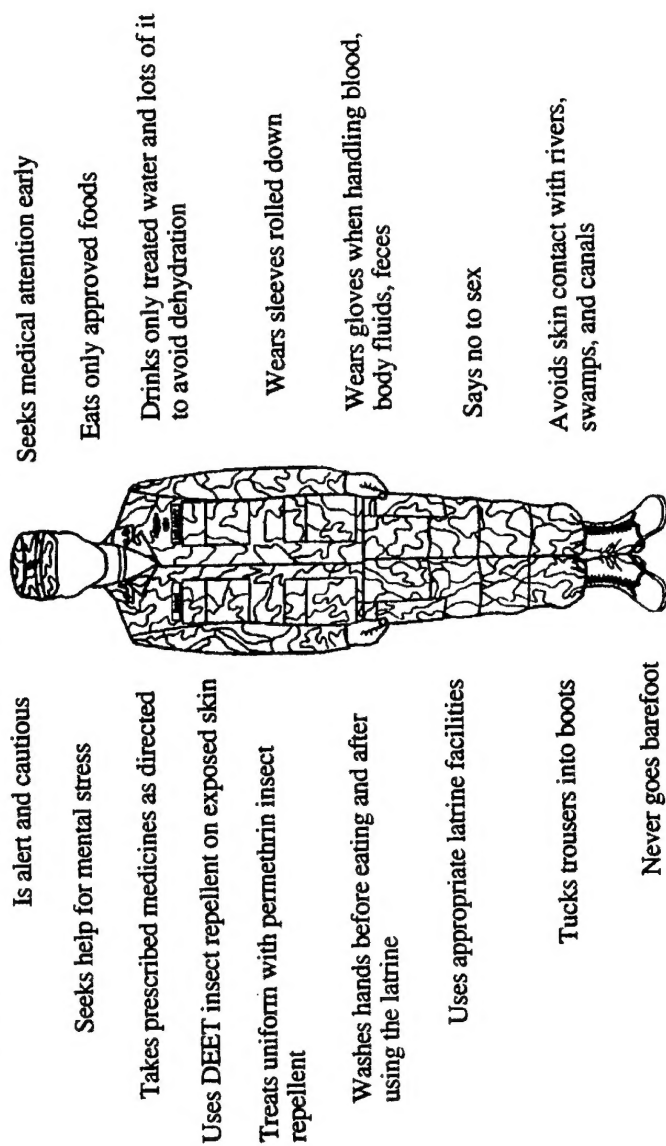
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## Biggest Risks to U.S. Personnel

## How to Avoid Those Risks

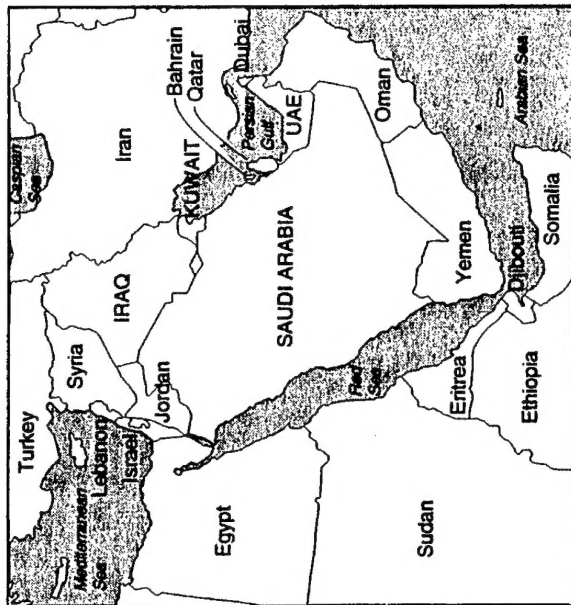
<b>INJURIES</b>	Can kill or hurt you.	Safety first. Be alert and be cautious.
<b>HEAT</b>	Can knock you down without much warning and may cause coma and death.	Drink fluids frequently. Take appropriate rest breaks when working in the heat. Keep an eye on your buddy.
<b>MENTAL STRESS</b>	Can affect you before, during, and long after the operation.	Talk openly and regularly with your buddy or unit leader about anything that troubles you. Don't be afraid to seek the help of a chaplain or social worker.
<b>LOCAL WATER</b>	Can cause serious illness and may contain parasites.	Do not drink or use untreated water or ice. Always wash your hands before eating and after using the latrine.
<b>LOCAL FOOD</b>	Can cause serious illness and may contain parasites.	Do not eat local foods. Eat only U.S.-military-approved foods.
<b>INSECTS</b>	Transmit life-threatening diseases in this part of the world.	Use DEET repellent on exposed skin. Treat bed nets and clothing with permethrin spray. Sleep under a bed net.
<b>ANIMALS</b>	May transmit rabies and other life-threatening diseases to humans.	Avoid contact with all animals. If bitten or scratched, seek medical attention immediately.
<b>RIVERS, LAKES, SWAMPS, CANALS</b>	May contain parasites that penetrate unprotected skin and cause serious illness.	Do not swim or bathe in rivers, lakes, swamps, or canals. If you must wade in fresh water, avoid direct contact between your skin and the water, if possible.
<b>MALARIA</b>	Is a killer!	Take malaria pills as prescribed if you are going to one of the risk areas.

## The Healthy U.S. Soldier, Sailor, Airman, or Marine in Southwest Asia



For more detailed guidance on field sanitation, see Army Field Manual 21-10.

## MAP OF SOUTHWEST ASIA



Countries in Southwest Asia have a high concentration of serious diseases. Visitors who do not take precautions will become sick. Nearly all of the health problems that are discussed in this booklet can be prevented if the following simple measures are frequently and forcefully emphasized. Preventing disease and promoting safety are indicators of good soldier discipline.

## **SPECIFIC INFORMATION ON THE MEDICAL THREAT AND PREVENTION**

The following information is given as general health advice. Individual service recommendations may be more specific.

### **Infectious Diseases**

During almost all military activities, including war, large numbers of soldiers are affected by disease. Often disease will cause more casualties than bullets because war and other disasters disrupt sanitation and displace large numbers of people.

Practice disease prevention and report to medical personnel immediately if you feel ill. What you believe to be diarrhea or the flu may be a serious illness that needs immediate attention. Recently in Somalia, the great majority of U.S. military personnel remained healthy by preventing disease and getting medical help early. Still, many became ill because they did not follow preventive guidance correctly.

The following are the diseases most likely to affect U.S. personnel in Southwest Asia.

#### **1. DIARRHEA AND OTHER INTESTINAL PROBLEMS**

This is the problem most likely to affect deploying personnel, if precautions are not taken. Diarrhea can be caused by bacteria (cholera, salmonella, shigella, ETEC, campylobacter), viruses (hepatitis A, hepatitis E), protozoa (agents that cause amoebiasis, giardiasis, cryptosporidiosis), worms (ingested as worm eggs), or toxins (food poisoning). People usually get infected by consuming food or beverages contaminated by microscopic amounts of feces. Usually there is no way to tell whether a particular meal or drink is contaminated by looking at it or smelling it. Diarrhea can lead to severe dehydration.

Other symptoms of intestinal illness include stomach cramps, nausea, and vomiting. Diseases like typhoid fever and shigellosis can cause very high fevers. People who are sick may be contagious and should seek medical care, for their own sake and to prevent spread to others.

### **Prevention**

Treat all water for the proper amount of time before use unless it is carbonated, recently boiled, or known to be adequately purified by iodination or chlorination. Proper storage in clean containers is important. Keep storage containers covered or capped and guarded. Use bottled water only if the seal is unbroken.

Do not use ice cubes unless their source and handling is known to be safe.

Eat only U.S.-military-approved foods. Although foods provided by natives may be intended as gifts, their safety to military personnel is doubtful. Meat, eggs, milk products, and uncooked vegetables are particularly dangerous. Fruits are safe if you peel them.

Only go to the bathroom in constructed latrines or other areas prepared for proper burial or destruction of wastes. Wash your hands after each use of the latrine and before eating.

Every unit should have its own field sanitation team made up of personnel from the unit itself. For further guidance on field sanitation see Army Regulation 40-5 and Field Manual 21-10.

## **2. RESPIRATORY DISEASE**

Respiratory diseases can be highly contagious, particularly in crowded conditions. Some diseases can be transmitted rapidly by the respiratory route, such as influenza, colds, and sore throats. Others, like tuberculosis (TB), can slowly progress so that you may not be aware of them until months or years after the initial contact. In Southwest Asia, tuberculosis may be a problem in some groups of local people.

Meningococcal disease is also spread by the respiratory route. Tiny droplets from the nose or throat of infected persons contain the bacteria that can be transferred to uninfected persons. These bacteria can be carried by the bloodstream throughout the body, causing a severe infection. They can also produce meningitis by infecting the lining that normally protects the brain and spinal cord.

### **Prevention**

All personnel should receive the annual influenza vaccine; this reduces the number of people who get sick with the flu. Transmission of other respiratory diseases is hard to prevent but can be reduced if individuals avoid coughing or sneezing on others. Sleeping head to toe with roommates is more effective than sleeping head to head in preventing the

spread of respiratory illnesses.

At the time of deployment, soldiers should have the results of a TB skin test (PPD) performed within the last year recorded on their medical records. Soldiers should be re-tested 8-12 weeks after redeployment. The meningococcal vaccine prevents most types of meningococcal disease.

### 3. DISEASES TRANSMITTED BY INSECTS

Sand flies, ticks, mosquitoes, and other insects in this area transmit serious diseases, such as leishmaniasis and hemorrhagic fevers. People with insect-borne diseases may become very sick. Symptoms usually include fever, headache, weakness, and muscle aches. Depending on the specific disease, they may also have eye pain, confusion, a rash, open skin sores, enlarged lymph nodes, and nausea. Personnel should report any illness with fever.

#### Prevention

Our experience in Somalia shows that with careful prevention and use of insect repellents, the vast majority of military personnel will return home safe and healthy.

The military's standard-issue DEET insect repellent lotion for skin (NSN 6840-01-284-3982), in the green tube, is to be applied as a thin layer to all exposed parts of the body. This includes ears, face, and neck. Avoid getting it into your eyes or mouth.

Another way to prevent diseases carried by insects is to wear the BDU with the sleeves rolled down and the pant legs tucked into boots. It is best to treat uniforms with the chemical permethrin, which stops insects from biting. Permethrin, also known as Permanone, should not be used on skin. It comes in two forms; the first is permethrin insect-repellent spray in the yellow can (NSN 6840-01-278-1336). This should be sprayed on the outside of the uniform until it looks wet. Allow the uniform to dry completely before putting it on. Your uniform is now insect-proof for six washings. After six washings, you must repeat the process to safeguard yourself against disease. Follow label instructions on the can, except DO NOT reapply at two-week intervals as is indicated on the label. A second method, using the IDAA kit (NSN 6840-01-345-0237), is now available. It involves soaking one uniform in a permethrin solution inside a plastic bag. Uniforms treated this way are good for the life of the uniform.

Bed nets should be sprayed thoroughly with permethrin for added protection. For best results, this should be



repeated every two weeks. Make sure that bed nets completely surround the bed and are tucked in under the bed or sleeping bag so that insects cannot enter. All of these products are safe and effective when used correctly.

Malaria is transmitted by mosquitoes. It does not occur in every part of Southwest Asia. Most personnel operating in this region will not need to take malaria pills. Consult your unit medical officer for advice on the specific area where you will be. When malaria pills are needed, they should be taken on time during and after deployment, exactly as directed.

If crossing areas where ticks are believed to be present, soldiers should periodically perform buddy checks.

#### **4. DISEASES TRANSMITTED BY ANIMALS**

Rabies is common in animals in Southwest Asia, including dogs and livestock. Rabies is transmitted directly by the animal through a bite or scratch.

Wild and domestic animals can transmit other diseases to humans either by direct contact, by releasing particular germs or parasites into the water and soil, or by being consumed as food. The germs that cause brucellosis, also known as undulant fever, are found in inadequately cooked meat and unpasteurized milk, cheese, and other dairy products. Tapeworms and other parasites may also be present in meat and cannot be detected by most individuals. Anthrax and Q fever can occasionally be obtained through contact with animals in the area.

##### **Prevention**

Disease transmission from animals can best be prevented by avoiding animals and not adopting "pets." Personnel should also avoid contact with animal skins and waste. Whenever possible, stay away from burrows. When animals must be handled, use rubber or latex gloves. If an animal bites or scratches you, seek medical attention as soon as possible.

#### **5. DISEASES TRANSMITTED BY CONTACT WITH WATER AND SOIL**

Several kinds of parasite in water and soil can penetrate human skin directly. Schistosomiasis is known to be a problem in Southwest Asia. It is a disease that occurs in humans when the larval form of the parasite, after emerging from freshwater snails, burrows through the skin of persons and passes into other parts of the body.

Leptospirosis, also known as mud fever, is acquired by consuming or contacting water or mud contaminated with infected animal urine.

Other parasites with complicated life cycles, such as hookworm, penetrate human skin from soil or grass contaminated with feces.

#### **Prevention**

Avoid swimming, wading, or bathing in bodies of water. If you must wade, make sure that you wear BDUs and boots (rubber boots would be ideal) or other impervious materials to minimize direct contact with the water. Also avoid going barefoot or lying directly on the ground.

### **6. DISEASES TRANSMITTED BY HUMAN BLOOD OR BODY FLUIDS**

Common sexually transmitted diseases include gonorrhea, chlamydia, syphilis, chancroid, warts, herpes, and hepatitis B. HIV is the virus most known to Americans for being transmitted by blood or body fluids. Viral hepatitis, particularly types B and C, is also transmitted this way and even more easily than HIV. Hepatitis is an infection of the liver, and its symptoms include fever, belly pain, diarrhea, and jaundice (yellow skin). Some infected people continue to carry hepatitis viruses long after they recover and can pass hepatitis on to others, usually through sexual or blood contact.

#### **Prevention**

Abstaining from sexual contact will completely prevent sexually transmitted diseases.

The same precautions doctors and nurses use for handling blood and body fluids will also work for you. Avoid contact with another person's blood or body fluids when possible. If this is not possible, wear latex or rubber gloves to handle this material.

Avoid tattoo parlors and do not share toothbrushes, shaving items, or eating and drinking utensils. Only sterile needles and syringes, as used by U.S. medical personnel, should be considered safe. Handle sharp objects with care. If you are accidentally cut or stuck with a contaminated needle or other sharp object, immediately wash the area with clean water and report for medical care.

The hepatitis B vaccine is very effective. All health care workers and mortuary affairs specialists should have received the three-shot series. Others at increased risk of hepatitis B infection, such as those with multiple sexual partners or those who have sexual contact with hepatitis virus carriers, may also benefit from receiving the vaccine.

## Mental Stress

Everyone is subject to stress and reacts to it. Stress can affect us physically and mentally, thereby affecting individual and unit performance. Mental stress can cause a variety of symptoms, including depression, anger, poor concentration, sleep problems, and poor appetite; physical symptoms can include aches and pains, numbness, bowel problems, and skin problems. Managing stress effectively can promote success. However, prolonged stress or very stressful events may erode our ability to cope. Intense events, such as involvement with dead, dying, or suffering people, are among those situations that soldiers may find most challenging. Even the most tough or seemingly stable among us may be deeply affected by these types of events. Others may seem to manage them more easily. Problems at home, troubled relationships, economic strain, general uncertainty, and other concerns may affect most of us sometimes and may contribute to overall stress during deployment. Stresses do not replace each other—they add to one another.

Individual stress can be managed effectively. It is important to personally identify those situations that are most stressful. The care, concern, and interest of leaders and other unit members is a powerful tool for lessening the effects of stress. Discuss the issues you are most concerned about with someone you trust, such as a friend, chaplain, or medic. Communications by phone or letter with those who are important to you back home can help resolve lingering worries. Find positive ways of relieving or balancing stress, such as through sports, games, or hobbies. Achieving some moments of relative privacy and taking advantage of opportunities for morale, welfare, and recreation can be valuable for some individuals. Even a moderate change in daily routine can help relieve stress and boost our ability to cope.

High amounts of stress can also sometimes undermine unit cohesion and contribute to tension, misconduct, lowered performance, and even substance abuse. The sources of stress and problems related to them must be ad-

dressed. Debriefing and command sensing sessions are excellent opportunities for leaders and soldiers to talk with each other and to develop closer working relationships. Personnel need to have a clear understanding of their unit's mission.

No two soldiers or units will manage stress in the exact same manner. However, it is important to take an active role in managing stress in ways that best serve you and your unit.

## **Non-Battle Injuries**

Accidental injuries can disable or kill soldiers quickly. Heavy machinery and equipment, loaded weapons, nighttime air traffic, and motor vehicles are all opportunities for disaster if safety is not constantly emphasized. Even something as innocent as a football game can cause significant injuries.

You may experience jet lag during your first week in country. Jet lag occurs because the normal bodily rhythms are disrupted by changes in time zones. Fatigue, irritability, headache, reduced efficiency, and early morning wakefulness occur after landing. Exhaustion and impaired judgement may be present. These symptoms usually go away within a week.

The situation in this area is unpredictable. Soldiers need to stay alert and be cautious.

### **OTHER SAFETY TIPS**

Take any prescribed medications as directed. Should you have unusual symptoms or unexpected side effects associated with prescribed medications, vaccinations, or protective measures, such as anti-malaria drugs and pyridostigmine tablets, seek medical care. Remember the health risks associated with taking preventive medications are minimal compared to the risks presented by life-threatening infectious diseases and potential exposure to nerve agent chemical threats.

In warm weather, petroleum products stored in cans must be vented. This prevents expansion of the container and explosions that cause significant injuries.

Containers used for potable (drinkable) water should be labeled "potable water." They should be used for storing only potable water. Never use containers that have had petroleum products in them for storing drinking water.

Grain (drinking) alcohol from nonapproved sources is often tainted with wood alcohol or other substances that can cause kidney failure, blindness, and other problems. Never consume alcohol from nonapproved sources. Do not use illegal drugs. Local laws are very harsh and punishments include death.

## **Workplace and Environmental Chemical Exposures**

Military operations involve potentially hazardous exposures to a variety of workplace and environmental chemicals and physical hazards (heat, microwave, ionizing radiation, etc.). Take adequate precautions to minimize hazardous exposures during operation and maintenance of weapons systems and other military equipment and combat support operations. At all times, follow training guidelines and procedures to ensure safety. Use military industrial chemicals (solvents, pesticides, dust suppressants, fuels, etc.) in a safe manner according to established procedures and practices. Minimize unnecessary exposure to gases from engine exhausts. Use kerosene heating equipment properly under conditions of adequate ventilation. If accidental exposures occur, notify your supervisor and seek medical care if necessary.

## **Climate**

As shown in the following table, the temperatures in this region can rise above 100°F in the summer and fall below 40°F in the winter. The heat in this area is worsened by dry breezes in some areas and high humidity in others. Unacclimatized personnel, under stress, suffering jet lag, dealing with a limited water supply, and working hard, are particularly susceptible to heat injuries. These injuries should be expected to be the dominating initial threat (often greater than the enemy forces) among new arrivals during warmer months.

**TEMPERATURE AND RELATIVE HUMIDITY IN THE REGION**  
Average Daily High (°F) / Average Daily Low (°F) / Relative Humidity (%)

	Al Kuwait, Kuwait	Al Qaysumah (King Khalid Military City), Saudi Arabia	Dhahran, Saudi Arabia	Riyadh, Saudi Arabia	Baghdad, Iraq
January	61/49/69	65/45/72	70/54/69	70/47/57	61/40/68
February	65/52/65	65/45/73	72/56/65	74/49/50	65/43/60
March	72/59/67	70/49/65	79/61/58	83/56/51	72/49/55
April	83/68/61	86/61/51	90/70/50	90/65/49	85/58/49
May	94/77/61	97/70/33	99/77/40	101/72/41	97/67/33
June	99/83/56	108/77/18	106/83/33	108/77/39	106/74/24
July	103/86/43	108/77/18	110/76/22	108/79/26	110/76/22
August	104/86/48	108/77/18	108/85/46	108/76/27	110/76/23
September	101/81/52	104/72/17	103/81/51	103/72/33	104/70/27
October	92/74/62	97/65/25	95/74/59	94/61/36	92/61/36
November	77/63/63	77/54/34	83/65/63	85/56/47	77/52/55
December	65/54/71	74/47/42	74/58/70	70/49/64	65/43/68

Sunburn, vision disturbances, and chapped lips may be expected. Sunblock and Chapstick or Vaseline should be used. Itchy eyes, coughing, runny nose, sore throat, and sneezing are problems in this dusty, sandy environment. Wearing goggles and a cloth around your neck that can be used as a cover for your nose and mouth is helpful; wearing a hat will help protect your head from the sun.

**Prevention**

To avoid dehydration and heat injuries when the weather is warm or hot, drink more fluids and follow work-rest cycles. Reduce problems related to sun exposure by using sunglasses, sunscreen (SPF 15 or higher), and lip protection.

Cold temperatures can occur at night and in the winter, so extra warm, dry clothing may be important. Never sleep inside a closed vehicle or tent while a heater is on without making sure that there is adequate ventilation.

**Hazardous Creatures**

Poisonous snakes, scorpions, and spiders are found in Southwest Asia. Packs of wild dogs are aggressive and should be avoided because of the risk of bites and rabies.

**Prevention**

Avoid venomous insects. Stings need to be reported immediately to medical personnel because they can be rapidly fatal. Military personnel with a known allergy to bee stings should carry a bee sting kit. Personnel should not go barefoot, sleep directly on the ground, or put their hands or feet in crevices or holes. Shake out boots and clothing before you put them on. Keeping animals, including spiders and scorpions, as pets is prohibited. Water spigots should be protected or raised high from the ground to prevent animals from licking the spouts.

**PERSONAL HYGIENE**

Maintaining personal hygiene is the mark of a professional soldier and will prevent many skin problems that can become serious. Good hygiene includes frequent handwashing, proper dental care, maintenance of clean, dry clothing, and bathing in approved, safe water as often as is practical. If a shower is not available, sites of perspiration should be

washed with a washcloth daily. Socks should be changed as frequently as possible. Foot powder may help prevent fungal infections.

## REPRODUCTIVE HEALTH ISSUES

Pregnant soldiers should not deploy to Southwest Asia. Certain vaccinations given during predeployment processing (measles, mumps, & rubella and typhoid) are not recommended during pregnancy. Any soldier who believes she may be pregnant should have a pregnancy test done before preparation for deployment.

Soldiers should not have sexual intercourse during the deployment. Any soldier in Southwest Asia who believes she has become pregnant should seek medical care as soon as possible so a pregnancy test can be performed. She should also talk to a doctor about any medicine she is taking.

Some soldiers may need to take chloroquine pills to prevent malaria. Chloroquine does not have any harmful effects on the fetus when used in recommended doses. However, doxycycline, sometimes used to prevent or treat malaria and other illnesses, should not be used during pregnancy because it may affect teeth and bone development in the fetus.

In Southwest Asia, diseases caused by insect bites are a significant threat to the health of soldiers. Thus, proper use of personal protective measures (PPMs) to prevent insect bites is an important part of staying healthy. The U.S. military's insect repellents, 33% DEET (on the skin) and permethrin (on BDUs and bednets), are not known to be risky to pregnant women or to developing fetuses when used as directed. As is always the case in military operations, other products to control insects may be required for preventive health measures. You should know the health risks involved and protect yourself accordingly.

All personnel should minimize exposure to hazardous materials and use appropriate protective measures when handling them.



## INFORMATION ON PYRIDOSTIGMINE

Your primary protection against chemical weapons is your chemical protective mask and battle dress overgarment (BDO). You have also been given some items to help you in case you are exposed to chemical warfare agents. These items are:

- a. Two antidotes (Atropine and 2-PAM), which are components of your MARK I Nerve Agent Antidote Kit.
- b. Pyridostigmine. Based on the results of studies in animals that were exposed to nerve agents, the Department of Defense has concluded that pyridostigmine, when used in conjunction with atropine and 2-PAM, may be critical to your survival. Pyridostigmine, for military use, must be taken before exposure to nerve agents. Pyridostigmine can be effective only when used with the items in your MARK I Kit. Many years of use in humans for non-military purposes indicates that pyridostigmine is safe and free from debilitating side effects if used as recommended. Do not exceed stated dose (one tablet every 8 hours). Pyridostigmine may cause stomach cramps, diarrhea, nausea, frequent urination, or headaches. Seek medical attention if these or other symptoms persist or worsen.

**WARNING:** If you have asthma, are pregnant, or are taking medicine for high pressure or glaucoma, see your unit doctor before taking pyridostigmine.

## Immunization Summary

Immune globulin	It should be given to all those deployed; prevents hepatitis A.
Tetanus / Diphtheria vaccine	A booster is recommended every 10 years; every 5 years when treating a "dirty" wound to prevent tetanus.
Influenza vaccine	Required annually; normally given 1 Oct through 31 Mar.
Typhoid vaccine	A booster is required if more than 3 years (the shot) or 5 years (the oral vaccine) since the last dose.
Hepatitis B vaccine	All health care workers must receive this 3-shot series. Others at increased risk of infection are encouraged to receive it too.
Rabies vaccine	Animal handlers and Special Forces personnel should receive the pre-exposure rabies vaccination series.
Measles & Rubella vaccine	A one-time booster is recommended for soldiers born after 1956. These vaccines are currently given during basic training.
Polio vaccine	A one-time adult booster is recommended for soldiers; it is usually given during basic training.
Meningococcal vaccine	Soldiers should have received this during basic training. Reimmunization for those at risk should take place every 3 years.
<b>Not recommended:</b> Cholera vaccine	The licensed cholera vaccine is not very effective, requires a prolonged series of shots, and has bothersome side effects.

Note: This information is given as general health advice. Individual service recommendations may be more specific.



# Map of Southwest Asia

